# EXPERIMENTAL CELL RESEARCH

VOLUME 56 · 1969

UNIVERSITY OF HAWAII
LIBRARY

LIBRARY USE ONLY

Digitized by the Internet Archive
in 2026

https://archive.org/details/experimental-cell-research_1969_56_contents

# EXPERIMENTAL CELL RESEARCH

*Published under the auspices of*

THE INTERNATIONAL SOCIETY FOR CELL BIOLOGY


EXECUTIVE EDITORS

T. CASPERSSON · T. GUSTAFSON · D. MAZIA

ASSOCIATE EDITOR

N. R. RINGERTZ

ADMINISTRATIVE EDITOR

VERA RUNNSTRÖM-REIO

EDITORIAL OFFICE

KAROLINSKA INSTITUTET, S-104 01 STOCKHOLM 60, SWEDEN

EDITORS

J. BRACHET · M. CHÈVREMONT · A. ENGSTRÖM

E. FAURÉ-FREMIET · G. FOLEY · G. KLEIN · O. LINDBERG · G. MONTALENTI

A. MOSCONA · J. PAUL · SIR JOHN RANDALL · J. RUNNSTRÖM

F. O. SCHMITT · C. H. WADDINGTON · R. W. G. WYCKOFF



**VOLUME 56 · 1969**

ACADEMIC PRESS, New York and London

COPYRIGHT, © 1969, BY ACADEMIC PRESS INC.

*All Rights Reserved*

*No part of this book may be reproduced in any form, by photostat, microfilm, or any other means, without written permission from the publishers*

Printed in Sweden by
Almqvist & Wiksells Boktryckeri AB
Uppsala 1969

# TABLE OF CONTENTS

## NUMBER 1, JULY 1969


D'Amelio, V & Costantino-Ceccarini, E, Amino acid uptake, protein synthesis and polyribosome profiles in maturing erythroid cells from chick embryos 1

Ito, T & Moore, G E, The growth-stimulating activity of peptides on human hematopoietic cell cultures 10

Bodel, Ph & Malavista, S E, Phagocytosis by human blood leucocytes during suppression of glycolysis 15

Higgins, M L, Shaw, T J, Tillman, M C & Leach, F R, Effect of phenethyl alcohol on cell culture growth. II. Isolated cell components and lysosomal enzymes 24

Shumway, L K & Park, R B, Light-dependent reduction of some tetrazolium and ditetrazolium salts by chloroplasts 29

Gutmann, E, Hanzlíková, V & Holečová, E, Development of fast and slow muscles of the chicken in vivo and their latent period in tissue culture 33

Kinoshita, S, Periodical release of heparin-like polysaccharide within cytoplasm during cleavage of sea urchin egg 39

Albrecht, C, Fractionation of nuclei from induced hepatomas by sucrose gradient centrifugation 44

Adams, R L P, Phosphorylation of tritiated thymidine by L929 mouse fibroblasts 49

Adams, R L P, The effect of endogenous pools of thymidylate on the apparent rate of DNA synthesis 55

Yataghanas, X, Gharton, G & Thorell, B, Microspectrofluorometry of a periodic acid-Schiff reaction in blood cells 59

Steinert, M, Van Assel, S & Steinert, G, Etude, par autoradiographie, des effects du bromure d'éthidium sur la synthèse des acides nucléiques de *Crithidia luciliae* 69

Moreno, G & Vinzens, F, Effects de la microirradiation ultra-violette sur différentes parties de la cellule. I. Etude en microscopie électronique sur coupes en série transversales et sagittales 75

Aketa, K & Onitake, K, Effect on fertilization of antiserum against sperm-binding protein from homo- and heterologous sea urchin egg surfaces 84

Rappaport, R, Division of isolated furrows and furrow fragments in invertebrate eggs 87

Birnbaum, G, Adherence and phagocytosis of fresh erythrocytes by glial cells in mouse cerebellum in vitro 92

Ghosh, T N, Quantitative study of DNA (Feulgen) in *Entamoeba invadens* 97

Modak, S P, Von Borstel, R C & Bollum, F J, Terminal lens cell differentiation. II. Template activity of DNA during nuclear degeneration 105

Beritashvili, D R, Kvavilashivili, I Sh & Kafiani, C A, Redistribution of $K^+$ in cleaving eggs of a fish *Misgurnus fossilis* 113

Kolodny, G M & Gross, P R, Changes in patterns of protein synthesis during the mammalian cell cycle 117

Zetterberg, A & Auer, G, Early changes in the arginine residues of histone in human leucocytes exposed to phytohemagglutinin 122

Bryant, T R, Hydrolysis in Feulgen autoradiography. I. Loss of label from S-period nuclei and its subsequent association with non-S chromatin 127

Harris, J W & Patt, H M, Non-protein sulfhydryl content and cell-cycle dynamics of Ehrlich ascites tumor 134

de Terra, N, Differential growth in the cortical fibrillar system as the trigger for oral differentiation and cell division in *Stentor* 142


## PRELIMINARY NOTES


Pawlowski, P J & Berlowitz, L, Non-replicating chromatin: Its attachment to the nuclear membrane in mealy bugs 154

Cornell, R, The use of nucleopore filters in ultrastructural studies of cell cultures 156

Zeitz, L, Ferguson, R & Garfinkel, E, Incorporation of $^3$H-TdR and $^3$H-BUdR into sperm DNA of *Arbacia punctulata* after coelomic injection 159

Molinaro, M & Mozzi, R, Heterogeneity of tRNA during embroynic development of the sea urchin *Paracentrotus lividus* 163

Verbin, R S, Goldblatt, P J, Saez, L & Farber, E, A dense particulate component of nucleoli of rat intestinal crypt cells 167

Lindahl, P E & Lustig, G, Structural changes in the surface involved in head-to-head association of washed bull spermatozoa 169

Merchant, H, Secretory granules in ciliated cells of the rabbit oviduct 171

Sedgley, N N & Stone, G E, DNA synthesis in vinblastine synchronized *Tetrahymena* 174

Blomquist, Ch H, Reversible inactivation of nicotinamide adenine dinucleotide kinase in extracts of unfertilized sea urchin eggs 172

NUMBERS 2–3, AUGUST 1969

Monneron, A & Moulé, Y, Critical evaluation of specificity in electron microscopical radioautography in animal tissues 179
Fulton, C & Guerrini, A M, Mitotic synchrony in *Naegleria* amoebae 194
Hiramoto, Y, Mechanical properties of the protoplasm of the sea urchin egg. I. Unfertilized egg 201
Hiramoto, Y, Mechanical properties of the protoplasm of the sea urchin egg. II. Fertilized egg 209
Iversen, J-G, Phytohemagglutinin response of recirculating and non-recirculating rat lymphocytes 219
Miki-Noumura, T & Oosawa, F, An actin-like protein of the sea urchin eggs. I. Its interaction with myosin from rabbit striated muscle 224
Jeon, K W & Lorch, I J, Lethal effect of heterologous nuclei in amoeba heterokaryons 233
Schweizer, E & Halvorson, H O, On the regulation of ribosomal RNA synthesis in yeast 239
Webster, H L & Harrison, D D, Enzymic activities during the transformation of crypt to columnar intestinal cells 245
Pinard, J, Bellemare, G, Aubin, A, Daigneault, R & Cousineau, G H, Uptake and incorporation of leucine and thymidine in developing sea urchin eggs. The effect of $D_2O$ 254
Merriam, R W, The intracellular distribution of the free amino acid pool in frog oocytes 259
Hoffmann, E K & Kramhøft, B, A relationship between amino acid and sodium transport in *Tetrahymena pyriformis* 265
Rao, B & Gontcharoff, M, Functionality of newly synthesized DNA as related to RNA synthesis during mitotic cycle in *Physarum polycephalum* 269
Floyd, A D & Swartz, F J, The uterine epithelium of *Ascaris lumbricoides* as a model system for the study of polyploidy 275
Collier, J R & Yuyama, S, Characterization of DNA-like RNA in the *Ilyanassa* embryo 281
Berns, M W, Rounds, D E & Olson, R S, Effects of laser micro-irradiation on chromosomes 292
Harris, J W, Oxidation of glutathione in Ehrlich ascites tumor cells by methyl phenyldiazenecarboxylate (azoester) 299
Hillcoat, B L & Bertino, J R ,Variation of dihydrofolate reductase activity in mammalian cells in vitro 304
von der Decken, A, Regulation of the rate of amino acid incorporation into protein by rat liver cell sap components 309
Weber, J & Stich, H F, Response of somatic cell hybrids to exposure to adenovirus type 2 and 12 319
Rabinovitch, M, Phagocytosis of modified erythrocytes by macrophages and L2 cells 326
Zentgraf, H, Deumling, B & Franke, W W, Isolation and characterization of nuclei from bird erythrocytes 333
Congote, L F, Sekeris, C E & Karlson, P, On the mechanism of hormone action. XIII. Stimulating effects of ecdysone, juvenile hormone and ions on RNA synthesis in fat body cell nuclei from Caliphora erythrocephala isolated by a filtration technique 338
Jahiel, R I, Quantitative morphologic studies during colonial growth of heteroploid cell strains differing in cell contact, shape and orientation 347
Barski, G, Butler, J W & Thomas, R J, Computer analysis of animal cell movement in vitro 363
Wunderlich, F, The macronuclear envelope of *Tetrahymena pyriformis* G in different physiological states. I. Quantitative structural data 369
Diehn, B, Phototactic response of *Euglena* to single and repetitive pulses of actinic light: Orientation time and mechanism 375
Harris, M, Growth and survival of mammalian cells under continuous thermal stress 382
Goshima, K & Tonomura, Y, Synchronized beating of embryonic mouse myocardial cells mediated by F cells in monolayer culture 387
Ericsson, J L E, Studies on cellular autophagy. II. Characterization of the membranes bordering induced autophagosomes in parenchymal liver cells 393
Bolund, L, Darżynkiewics, Z & Ringertz, N R, Growth of hen erythrocyte nuclei undergoing reactivation in heterokaryons 406
Ringertz, N R, Darżynkiewicz, Z & Bolund, L, Actinomycin binding properties of stimulated human lymphocytes 411
Darżynkiewicz, Z, Bolund, L & Ringertz, N R, Nucleoprotein changes and initiation of RNA synthesis in PHA stimulated lymphocytes 418
Friedmann, T, Seegmiller, J E & Subak-Sharpe, J H, Evidence against the existence of guanosine and inosine kinases in human fibroblasts in tissue culture 425
Ron, A & Prescott, D M, The timing of DNA synthesis in *Amoeba proteus* 430
Reed, R D, Hughes, T J, Taylor, W B & Bruce, W R, The electronic determination of the size distribution of L-cell minicolonies 435
Arora, O P, Shah, V & Rao, S R V, Studies on micronuclei induced by mitomycin-C in the root cells of *Vicia faba* 443
Schaer, J C, Grieder, A, Heiniger, H J & Schindler, R, Comparison of $^3$H-cytidine and $^3$H-5-uridine as precursors of RNA 449
Steffen, J A & Stolzmann, W M, Studies on in vitro lymphocyte proliferation in cultures synchronized by the inhibition of DNA synthesis. I. Variability of S plus G2 periods of first generation cells 453